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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,519	11/03/2003	Minoru Chida	244606US0	1401
22850	7590	06/29/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER KRUER, KEVIN R	
			ART UNIT 1773	PAPER NUMBER
			NOTIFICATION DATE 06/29/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/698,519	<b>Applicant(s)</b> CHIDA ET AL.	
	<b>Examiner</b> Kevin R. Kruer	<b>Art Unit</b> 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9, 10, and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-6, 9, 11, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over (a) Odashima et al (US 6,040,054) in view of (b) Applicant's admissions and (c) JP 11310757A (herein referred to as Nippon) and (d) JP05286072A (Mitsui).

Odashima teaches a chromium-free composition for treating metal surfaces comprising the following: (a) a hydroxyl group-containing organic resin, (b) a phosphoric acid, (c) ions of at least one metal selected from the group consisting of Cu, Co, Fe, Mn, Sn, V, Mg, Ba, Al, Ca, Sr, Nb, Y, and Zn, and (d) at least one of colloids or powders of SiO<sub>2</sub> (abstract). Said composition is applied to a cold-rolled steel sheet (col 1, lines 59+) in amounts of 0.2-2.0g/m<sup>2</sup> (col 13, lines 23+). The silica has a particle size of 1-12nm and is included in amounts of 3-30 pbw (col 11, lines 18+). Components (a) and (c) are herein understood to be a polymer resin molecular-associated by ion cluster. The composition may further comprise a crosslinking agent (col 8, lines 66+), which is herein understood to read on the claimed first and second "crosslinking agent." It would have been obvious to optimize the amount of said crosslinking agent added to the composition in order to obtain the desired crosslink density.

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Said preamble limitation "superior in weldability and corrosion resistance" is herein understood to state latent properties of the claimed laminate and does not further limit the claimed invention.

The film is applied to the metal substrate by applying an aqueous coating of said resin composition to the steel sheet and heating to dry (col 11, lines 55+). Furthermore, the film may be roll coated (col 11, line 62). In such a process, the film is understood to inherently be subjected to the claimed elongation percentage of claim 6.

Odashima does not teach that the steel should be galvanized. However, Applicant admits that steel sheets are in many cases hot dip galvanized at their surfaces in order to ensure corrosion resistance (bottom of page 1 of the specification). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to hot dip galvanize the steel substrate of Odashima. The motivation for doing so would have been to improve the corrosion resistance of the laminate.

Odashima also does not teach that the resinous coating should comprise ammonium vanadate. However, Nippon teaches that 0.1-10wt% ammonium vanadate may be added to corrosion resistant resin coatings that are to applied to steel sheets in order to increase the anticorrosive properties of the coating (abstract). Therefore, it would have been obvious to one of ordinary skill in the art to add 0.1-10wt% ammonium vanadate to the resin coating taught in Odashima. The motivation for doing so would have been to increase the anticorrosive properties of the coating.

Odashima also does not teach that the hydroxyl group containing organic resin should comprise an ionomer. However, Mitsui teaches ionomers may be utilized in

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corrosion resistant coatings for metal substrates (abstract). Said polymer has excellent storage stability, good solvent resistance, deep drawing nature, alkali resistance, coating adhesion, and corrosion resistance (0008). The ionomer comprises 8-95wt% ethylene (0016) with the remainder of the copolymer comprising unsaturated carboxylic acid (0015). The composition should further comprise 1-7wt% epoxy which acts as a crosslinking agent for the ionomer (0020-0021). Said crosslinking agent is herein understood to read on the first and second crosslinking agents of the claimed invention. Thus, it would have been obvious to utilize the ionomer/epoxy resin taught in Mitsui as the component (a) taught in Odashima. The motivation for doing so would have been because said resin has excellent storage stability, good solvent resistance, deep drawing nature, alkali resistance, coating adhesion, and corrosion resistance.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Odashima et al (US 6,040,054) in view of Applicant's admissions and JP11310757 (herein referred to as Nippon) and Mitsui, as applied to claims 1-6 and 9 above, and further in view of Shimizu et al (US 5,950,468).

Odashima is relied upon as above, but does not teach that the surface of the steel sheet should have a center line average roughness of 0.1-2um. However, Shimizu teaches that the roughness of metal substrates should be controlled in order to increase the adhesion between said sheet and a resinous coating (col 9, lines 1+). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the surface roughness of the steel sheet taught in Odashima. The motivation for doing so would have been to control the adhesion between the metal

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4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Odashima et al (US 6,040,054) in view of Applicant's admissions and JP11310757A (herein referred to as Nippon) and Mitsui, as applied to claims 1-6 and 9 above, and further in view of Dalton (US 6,015,855).

Odashima in view of Applicant's admissions and Nippon is relied upon as above, but none of the references teach the acrylic acid should be neutralized with an amine. However, Dalton teaches it is known in the art to neutralize acrylics with amines in order to make them water reducible (col 4, lines 55+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to neutralize the ionomer taught by Odashima in view of Morishita. The motivation for doing so would have been to make the ionomer water reducible.

5. Claims 1-4, 6, 9, 12, 13, 15, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al (US 6,465,114) in view of JP05286072A (Mitsui).

Honda teaches a chromium-free composition for treating metal surfaces comprising the following: (a) an aqueous organic resin, (b) 2-50wt% tannic acid, (c) and at least one of 10-500parts SiO<sub>2</sub> (col 13, lines 49-col 14, line 28t). Said composition is applied to a galvanized steel sheet (abstract) in amounts of 1-300.0g/m<sup>2</sup> (col 16, lines 10+).

Said preamble limitation "superior in weldability and corrosion resistance" is herein understood to state latent properties of the claimed laminate and does not further limit the claimed invention.

The film is applied to the metal substrate by applying an aqueous coating of said resin composition to the steel sheet and heating to dry. Furthermore, the film may be roll coated. In such a process, the film is understood to inherently be subjected to the claimed elongation percentage of claim 6.

Honda also does not teach that the organic resin should comprise an ionomer. However, Mitsui teaches ionomers may be utilized in corrosion resistant coatings for metal substrates (abstract). Said polymer has excellent storage stability, good solvent resistance, deep drawing nature, alkali resistance, coating adhesion, and corrosion resistance (0008). The ionomer comprises 8-95wt% ethylene (0016) with the remainder of the copolymer comprising unsaturated carboxylic acid (0015). The composition should further comprise 1-7wt% epoxy which acts as a crosslinking agent for the ionomer (0020-0021). Said crosslinking agent is herein understood to read on the first and second crosslinking agents of the claimed invention. Thus, it would have been obvious to utilize the ionomer/epoxy resin taught in Mitsui as the component (a) taught in Honda. The motivation for doing so would have been because said resin has excellent storage stability, good solvent resistance, deep drawing nature, alkali resistance, coating adhesion, and corrosion resistance.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Mitsui, as applied to claims above, and further in view of Shimizu et al (US 5,950,468).

Honda is relied upon as above, but does not teach that the surface of the steel sheet should have a center line average roughness of 0.1-2um. However, Shimizu

teaches that the roughness of metal substrates should be controlled in order to increase the adhesion between said sheet and a resinous coating (col 9, lines 1+). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the surface roughness of the steel sheet taught in Honda. The motivation for doing so would have been to control the adhesion between the metal.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Mitsui, as applied to claims above, and further in view of Dalton (US 6,015,855).

Honda in view of Mitsui is relied upon as above, but none of the references teach the acrylic acid should be neutralized with an amine. However, Dalton teaches it is known in the art to neutralize acrylics with amines in order to make them water reducible (col 4, lines 55+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to neutralize the ionomer taught by Honda in view of Mitsui. The motivation for doing so would have been to make the ionomer water reducible.

### ***Response to Arguments***

Applicant's arguments filed March 29, 2007 have been fully considered but they are not persuasive.

Applicant argues the present invention provides steel with superior weldability and corrosion resistance. In support of said argument, applicant points to pages 7 and 8 of the specification and Table 2. While applicant acknowledges that Odashima teaches a silica content range that overlaps the claimed range, applicant argues there is



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no teaching of its criticality with regards to weldability and corrosion resistance. Said data had been fully considered but is not persuasive. The examiner initially notes that the examples do not agree in scope with the claimed subject matter. Specifically, the examples are drawn to a single composition comprising specific copolymer and crosslinking species, and all components are in a specific amount (and not shown over the entire claim range). Furthermore, the affect of silica on such coating's weldability and corrosion resistance is known (see Background of the invention of 7147,897; 6,784,245; 5,330,850). Thus, said results are not unexpected.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

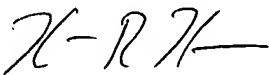
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R. Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin R. Kruer  
Patent Examiner-Art Unit 1773